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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,085

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Ralph Reiche

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08/22/2006

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
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EXAMINER

TUROCZY, DAVID P

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/516,085	Applicant(s) REICHE ET AL.	
	Examiner David Turocy	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2006.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-47 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 28-47 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendments, filed 6/8/2006, have been fully considered and reviewed by the examiner. The examiner notes the cancellation of claims 13-27 and the addition of new claims 28-47. Claims 28-47 remain pending in the instant application.

Response to Arguments

2. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection and will be addressed in the rejection below.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 28-30, 33-47 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for diffusing aluminum and/or cobalt to change the phase or make sufficiently brittle the partial bonding layer, does not reasonably provide enablement for diffusion of any combination of two agents from the gas phase. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. While the specification clearly enables the diffusion of aluminum and/or cobalt causes the conversion of the bond layer into a new phase, the specification does

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not provide additional direction and/or working examples to one of ordinary skill in the art to provide any combination of various diffusion agents, all of which is within the scope of the claim, to change the phase and/or brittleness in the bonding layer which will result in uniform acid attack and therefore be uniformly removed without undue experimentation. The specification does not provide direction and/or examples, except for aluminum and cobalt, of diffusion agents that will successfully for new phases in the MCrAlY bonding layer that can be more easily removed by an acid bath.

As for claim 30 and 40, the claim requires a first diffusion agent of metal and the specification, as described above, only enables aluminum and cobalt and does not provide other working examples or direction to one skill in the art to provide any other metal in combination with silicon or carbon to change the phase and/or brittleness in the bonding layer which will result in uniform acid attack and therefore be uniformly removed without undue experimentation.

5. Claims 28-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim requires complete diffusion from a gas phase, however, the examiner can not locate proper support in the specification for such an added limitation. It appears as though the complete diffusion is a result of a

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heat treatment, see 0035, and not completely diffusing from a gaseous phase, see 0033.

Claims 28-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim requires diffusing from a gas phase, a diffusion agent comprising at least two elements, however, the examiner can not locate proper support in the specification. The specification appears to disclose one component of a two component diffusion agent is diffused directly from the gas phase and both of the components only diffuse into the layer as a result of the heat treatment (0033-0035).

Claims 28-37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim requires both the degraded and non-degrade regions exhibit a more uniform reactivity in an acid bath, however, the examiner can not locate proper support in the specification. The specification does not relate the acid reactivity of the degraded regions with the non-degraded regions.

Claims 35-37 and 44-47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject

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matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification has not properly described the complete diffusion comprising the vapor deposition methods as claimed and how the plasma spraying, evaporation coating, and/or CVD relate to the complete diffusing step.

If the applicant can provide support for the above limitations in the disclosure as originally filed, the examiner will withdraw the rejections.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 35-37 and 44-47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims require the complete diffusing comprises a vapor deposition method, but fails to claim what is being deposited and/or how the vapor deposition methods are being used to fully provide compete diffusion.

For the purposes of applying art the examiner will interpret the claims to require the claimed coating method to deposit a coating in the process subsequent to the first step.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 28-34, 38-43 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 03/029521 by Czech et al (Czech '521)

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

*** Please note US Patent Publication 2004/0244817 by Czech et al. is the publication which issued from the national stage application based on WO 03/029521. This publication is being used as an English translation of WO 03/029521, therefore all references to paragraphs are found in 2004/0244817 ***

Czech '521 discloses a method for uniformly removing a MCrAlY coating with corrosive products, comprising, first coarsely removing portions of the bonding layer, and then completely diffusing from the gas phase a diffusion agent comprising two elements into the remaining portion of the bonding layer and then uniformly removing the bonding layer using an acid bath, wherein the act of immersion can be considered

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mechanical, giving the term its broadest reasonable interpretation (paragraph 0018, 0032, 0037, 0068, 0071).

Czech '521 does not disclose converting the bonding layer to a different phase or making the bonding layer more brittle. However, the prior art and the present claims, reflected by claims 28 and 38, teach all the same process steps and thus the results obtained by applicants process must necessarily be the same as those obtained by the prior art. Therefore by diffusion coating to make corrosive products more uniformly removed by acid treatment, it must necessarily result in converting the bonding layer to a different phase or making the bonding layer more brittle. Either 1) the applicant and the prior art have different definitions diffusion of aluminum into a bonding layer, or 2) the applicant is using other process steps or parameters that are not shown in the claims.

Claims 29 and 39: Czech '521 discloses sand blasting or acid treatment (0019,0051).

Claims 31 and 32: Czech '521 discloses including cobalt with aluminum (0068).

Claims 33 and 42: Czech '521 discloses a thermal treatment to completely diffuse the diffusion agent into the bonding layer (0038).

Claims 34 and 43: Czech '521 discloses MCrAlY, wherein M is nickel, cobalt or iron (0005).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 28-30, 33-34, 36-43, and 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6217668 by Czech et al. (Czech '668) in view of US Patent 6042879 by Draghi et al.

Czech '668 disclose a method for uniformly removing corrosive products on a component, which comprises a overlay and/or protective coating having corrosion (Column 1, lines 40-50 abstract). Czech '668 discloses a first step of coarsely removing portions of the bonding layer and a second step of completely diffusing from the gas phase a diffusion agent comprising two components, and then removing by exposing to an acid bath or mechanical means (abstract, column 6, lines 5-28, column 4, lines 15-34).

Czech '668 does not disclose converting the bonding layer to a different phase or making the bonding layer more brittle. However, the prior art and the present claims, reflected by claims 28 and 38, teach all the same process steps and thus the results obtained by applicants process must necessarily be the same as those obtained by the prior art. Therefore by diffusion coating to make corrosive products more uniformly removed by acid treatment, it must necessarily result in converting the bonding layer to a different phase or making the bonding layer more brittle. Either 1) the applicant and

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the prior art have different definitions diffusion of aluminum into a bonding layer, or 2) the applicant is using other process steps or parameters that are not shown in the claims.

Czech '668 discloses a protective coating on a superalloy but fails to disclose the protective coating is a MCrAlY bond coating, however, Draghi, discloses known protective coatings for superalloy components are MCrAlY coatings, wherein M can be nickel or cobalt (Column 4, lines 3-19). Draghi discloses the MCrAlY is subject to corrosion and are refurbished by aluminizing because the aluminum content becomes deplete and therefore makes the MCrAlY more easily removed (Column 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Czech '668 to use the MCrAlY protective coating as suggested by Draghi because Czech '668 discloses removing protective coatings on superalloys and Draghi discloses MCrAlY is a known and suitable protective coating for superalloys and therefore one would reasonably expect success.

Claims 29 and 39: Czech '668 discloses sand blasting or acid treatment (column 3, lines 42-50).

Claims 30 and 40: Czech '668 discloses including silicon with aluminum (column 6, lines 5-20).

Claims 33 and 42: Czech '668 discloses a thermal treatment to completely diffuse the diffusion agent (column 4, lines 34-50).

Claim 35 and 44: Czech '668 discloses a process comprising plasma spraying (Column 3, lines 16-20).

Claims 36, 37, 45 and 46: Czech '668 discloses evaporation coating, which is a known chemical vapor deposition method (Column 4).

Claim 47: Czech '668 discloses sand blasting to remove the diffused layer (Column 6, lines 21-25).

12. Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czech '668 in view of Draghi as applied above and further in view of US Patent 3184292 by Argyriades et al.

Czech '668 in view of Draghi discloses co-diffusing aluminum and another element into the substrate. However, Czech '668 in view of Draghi fails to disclose co-diffusing cobalt with aluminum. However Argyriades discloses forming oxidation resistant diffusion coatings on a alloy and teaches co-diffusing aluminum with cobalt are known and suitable elements (Column 2, lines 48-61), the selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Czech '668 in view of Draghi to co-diffuse aluminum and cobalt with a reasonable expectation of success because Argyriades discloses aluminum and cobalt are known and suitable elements to provide a co-diffused coating on an alloy substrate.

Claim 32: Czech '668 in view of Draghi and further in view of Argyriades does not disclose converting the bonding layer to a different phase. However, the prior art

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and the present claims, reflected by claims 28 and 38, teach all the same process steps and thus the results obtained by applicants process must necessarily be the same as those obtained by the prior art. Therefore by co-diffusion coating aluminum and cobalt, it must necessarily result in converting the bonding layer to a different. Either 1) the applicant and the prior art have different definitions diffusion of aluminum into a bonding layer, or 2) the applicant is using other process steps or parameters that are not shown in the claims.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David Turocy
AU 1762



TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER